

REMARKS

Claims 1, 3, 4, 6 and 20 are pending in this application. At the outset, Applicants note that though the Office Action indicates that claims 1-6, 21 and 22 are pending, claim 20 still exists, and claim 22 was previously canceled. Thus, Applicants assume that the Office Action intended to state that claims 1-6, 20 and 21 are pending. By this Amendment, the features of claims 2 and 21 are incorporated into their independent claims 1 and 20, respectively. Claims 2, 5 and 21 are cancelled.

Entry of the amendments is proper under 37 CFR §1.116 since the amendments: (a) place the application in condition for allowance (for the reasons discussed herein); (b) do not raise any new issue requiring further search and/or consideration (since the amendments merely place features of dependent claims into their corresponding independent claims); and (c) place the application in better form for appeal, should an appeal be necessary. The amendments are necessary and were not earlier presented because they are made in response to arguments raised in the final rejection. Entry of the amendments is thus respectfully requested.

The Examiner is requested to consider the references submitted with the May 15, 2003 Information Disclosure Statement (IDS). This IDS submitted references of record from the Divisional Application (No. 10/279,830) of the present application. For the convenience of the Examiner, a copy of the PTO-1449 submitted with the May 15 IDS is attached hereto.

The Office Action rejects claims 1-3, 21 and 22 [sic, claims 20 and 21] under 35 U.S.C. §103(a) over JP 10-23608 to Tabata et al. (hereinafter Tabata) in view of JP 9-3714 [sic, presumably this is JP 9-37411 to Taniguchi et al. (hereinafter Taniguchi)]. Applicants respectfully traverse the rejection.

In particular, Applicants respectfully submit that the combination of applied references fails to disclose or suggest a control apparatus for a hybrid vehicle having an engine and a motor as drive power sources comprising, *inter alia*, a controller that detects a drive power requested for the vehicle drive wheel and that adjusts the drive power by setting an engine output increase, a motor output increase and a gear speed change by increasing a gear ratio, in an order of descending priorities of (1) the engine output increase, (2) the motor output increase, and (3) increasing the gear ratio so as to achieve the drive power requested, wherein the controller: (a) initially selects a gear speed of a low gear ratio within a range such that an engine revolution speed higher than or equal to a predetermined lower limit revolution speed is attainable, (b) achieves the requested drive power singly by the engine output with the gear speed selected, otherwise (c) achieves the requested drive power by the engine output and motor output when the requested drive power is not achievable singly by the engine output, otherwise (d) changes the gear speed by increasing a gear ratio when the requested drive power is not achievable by the engine output and the motor output, as recited in amended claims 1 and 20, and as previously recited in claims 2 and 21.

Tabata teaches a controller for a hybrid vehicle which provides electric motor torque assist to the engine upon satisfaction of certain conditions. In Tabata, when acceleration exceeds a threshold value, torque assist is provided by the motor generator while increase assist from the fuel injection control is limited, in order to preserve fuel economy. Specifically, in Tabata, when the increment ($\theta_{AC2} - \theta_{AC1}$) in the amount of accelerator operation is equal to or above a specified threshold value (α), motor assist control is exercised. Thus, in Tabata, when acceleration exceeds a certain value, motor output is actually dominant to engine output because the priorities change upon satisfaction of the acceleration condition. Thus, Tabata fails to teach adjusting drive power by setting an engine output increase, a motor output increase and gear speed change in descending priority.

The Office Action admits that Tabata is silent with respect to a gear ratio change. The Office Action relies upon Taniguchi to teach increasing a gear ratio to supply power. The Office Action further alleges that such a feature is well known in the art. However, Applicants respectfully submit that neither the art of record nor the state of the art disclose or suggest a controller which supplies power by causing an engine output increase, a motor output increase and gear ratio increase, in an order of descending priority. In most state of the art vehicles, gear ratio change is simply effected in response to detected drive shaft velocity. A conventional automatic transmission may have its own controller just for adjusting gears as necessary in response to demands on the engine, however, there is no suggestion in the Taniguchi of a controller which devises a scheme for supplying requested torque by adjusting engine output, motor output and gear speed change in that order of priority. More specifically, nowhere in Taniguchi is there suggestion that the controller changes the gear speed by increasing a gear ratio when the requested drive power is not achievable by the engine output and the motor output. There is nothing in Taniguchi which would suggest that a single controller changes the gear speed to achieve drive power, only after the engine and motor are unable to achieve it. Taniguchi merely discloses that controlling a gear ratio of a continuous variable transmission can be used to adjust drive power. Taniguchi *does not* teach a controller which gives lower priority to a gear ratio increase than motor or engine output increases.

The Office Action seems to imply that it would be intuitive that gear speed changes occur after an engine and/or motor are unable to achieve requested drive power. Applicants respectfully submit that whether or not gear speed changes are a natural consequence of failure of an engine and/or motor to supply requested drive power, the claims recite a controller which effects the gear speed change only after the engine and motor have been unable to fully satisfy requested drive power. Any reference used to reject the claims must

teach such a controller, or evidence must be provided that tends to prove that such a controller would have been obvious given the limited teachings of the applied reference. Applicants respectfully submit that such evidence is lacking in the Office Action.

Therefore, in view of these distinctions, Applicants respectfully submit that independent claims 1 and 20 are patentable over the combination of Tabata and Taniguchi. Accordingly, Applicants respectfully request that the rejection of claims 1 and 20 under 35 U.S.C. §103(a) be withdrawn.

The Office Action rejects claims 4-6 under 35 U.S.C. §103(a) over Tabata and Taniguchi, and further in view of JP 6-48222 (Boll) and JP 11-4506 (Minesawa et al.). Claim 5 has been cancelled, however, Applicants respectfully traverse the rejection of remaining claims 4 and 6.

In particular, Applicants submit that neither Boll nor Minesawa et al. supply the deficiencies of Tabata and Taniguchi with respect to independent claim 1. Therefore, Applicants submit that claims 4 and 6 are patentable over the combination of applied references for at least the same reasons that claim 1 is patentable.

In view of the foregoing, it is respectfully submitted that this application is in condition for allowance. Favorable reconsideration and prompt allowance of the claims are earnestly solicited.

Should the Examiner believe that anything further would be desirable in order to place this application in even better condition for allowance, the Examiner is invited to contact the undersigned at the telephone number set forth below.

Respectfully submitted,



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